

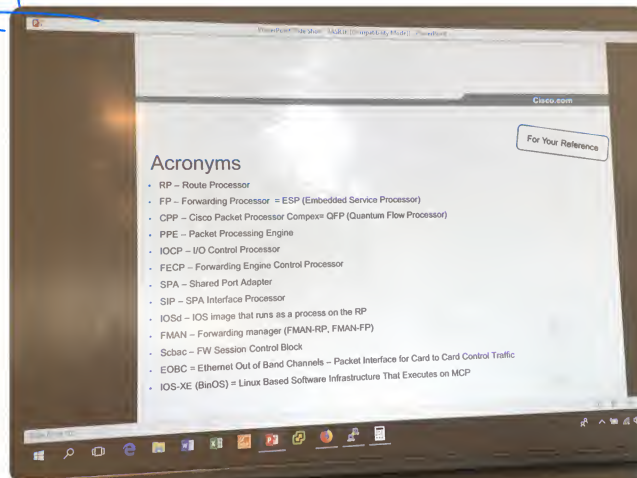
- software Based routers
- HW " "
- Hybrid " "

sw based routers → shared control & data plane
 → general purpose CPU (slow & smart)
 → CPU responsible for all operations
 800/2800/2900/3900/7200 series

PFR/OER Load sharing → ~~not~~ ^{is} in QoS
 . QoS for

EIGRP (FD/FS)

ASRIK.ppt



Perf: measurement for Bandwidth for routers [speed test tool]

ixia: best company for test network
ixiacom.com



SDM



معلومات الشبكات



QoS

CSR(conf) # access-list 100 permit ip any any
dscp ef
↳ = 46/48 → ^{الدرجة} ~~الدرجة~~ Voice

(--) # access-list tcp any any range 2000 2999

() # class-map CL-QoS

match access-group 100

do sh class-map

policy-map PL-QoS

class CL-QoS

set

priority 5000

sh policy-map

(conf) # int g2

(config-if) # service-policy out PL-QOS

sh policy-map int g2

RSVP ⇒ Label للترافيق
تسمح لوضع
بها تسميات فيها لا يمكن
فصلها عن التسمية
BW تحجز

Enabling RSVP

- **Enable RSVP**

- Router(config-if) ip rsvp bandwidth [interface-kbps]
[single-flow-kbps]

- **Disabling Reserving Interface Resources**

- Router(config-if) ip rsvp resource-provider none

- **Disabling Packet Classification**

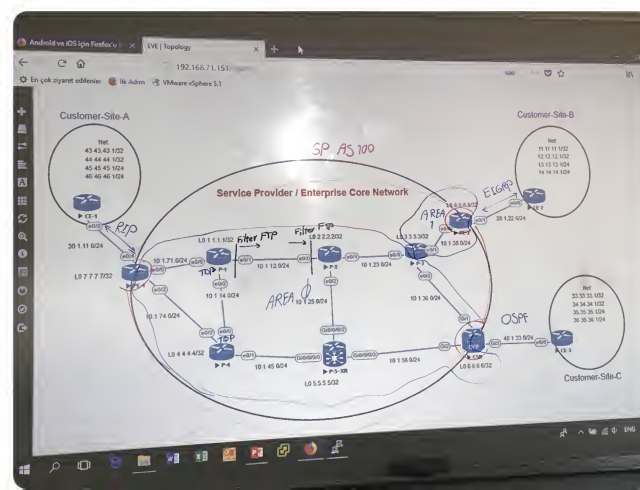
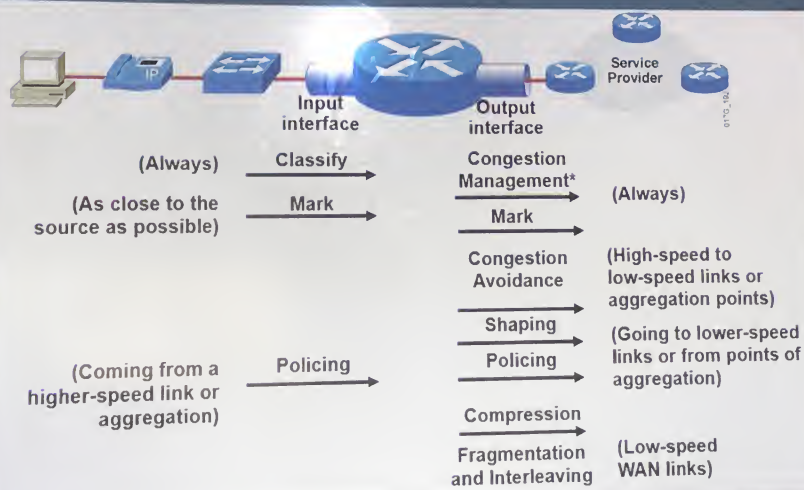
- Router(config-if) ip rsvp data-packet classification
none

QoS Mechanisms

- **Classification:** Each class-oriented QoS mechanism has to support some type of classification.
- **Marking:** Used to mark packets based on classification, metering, or both.
- **Congestion management:** Each interface must have a queuing mechanism to prioritize transmission of packets.
- **Congestion avoidance:** Used to drop packets early to avoid congestion later in the network.
- **Policing and shaping:** Used to enforce a rate limit based on the metering (excess traffic is either dropped, marked, or delayed).
- **Link Efficiency:** Used to improve bandwidth efficiency through compression, link fragmentation, and interleaving.

في الـ buffer
 في الـ buffer
 في الـ buffer
 في الـ buffer

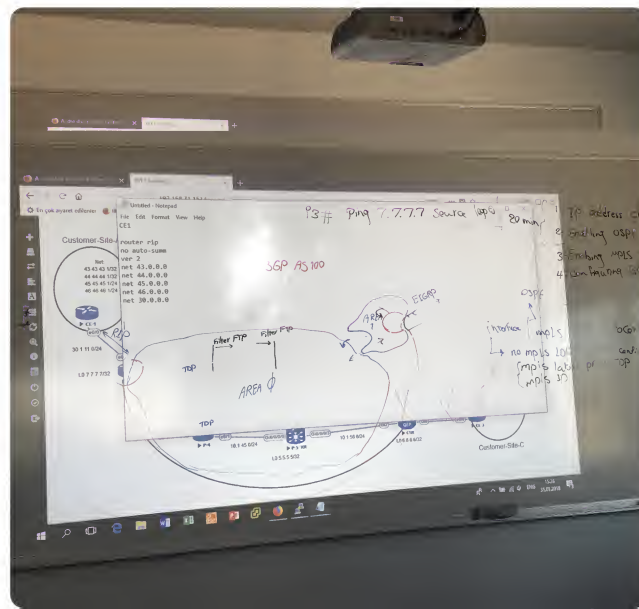
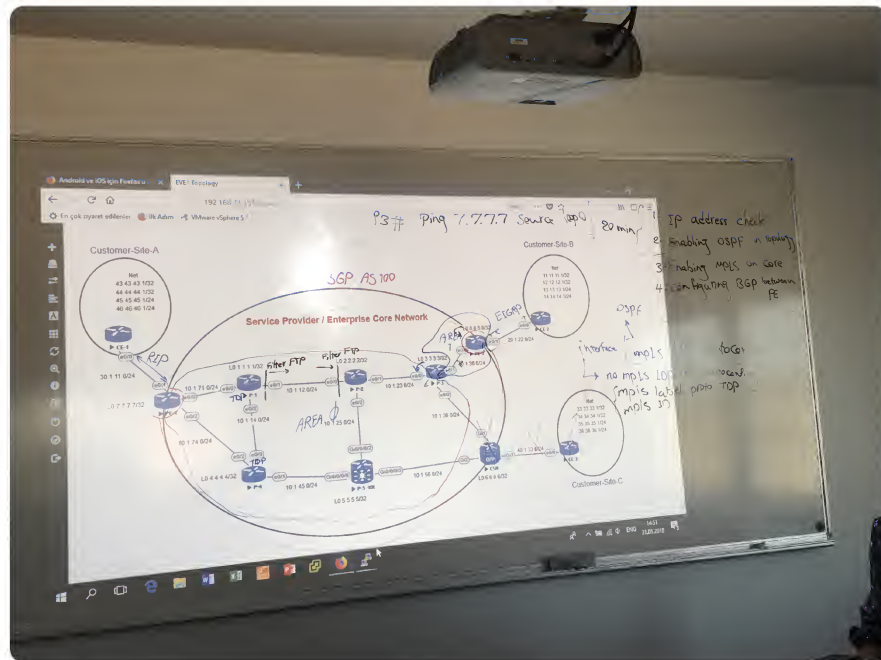
Applying QoS to Input and Output Interfaces

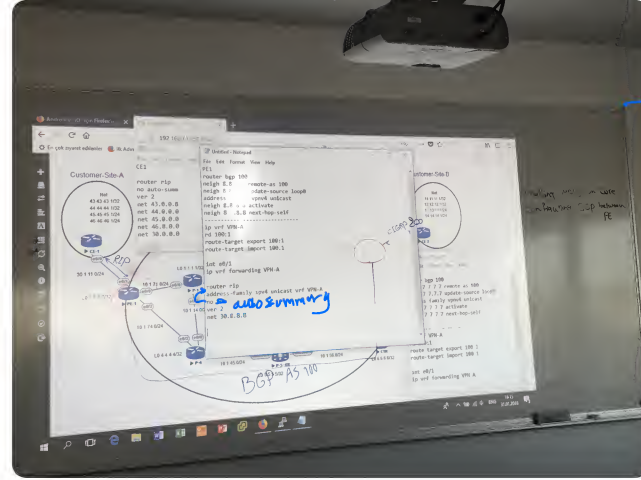


secure mpls connection between routers

P1(config)# mpls ldp neighbor 2.2.2.2 password
cisco

P2(config)# mpls ldp neighbor 1.1.1.1 password
cisco

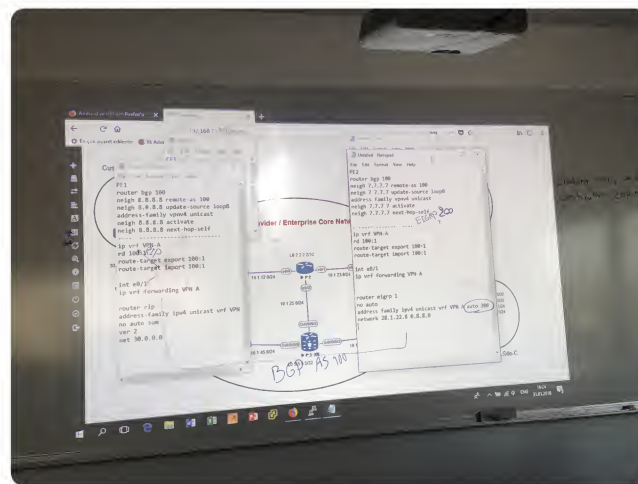
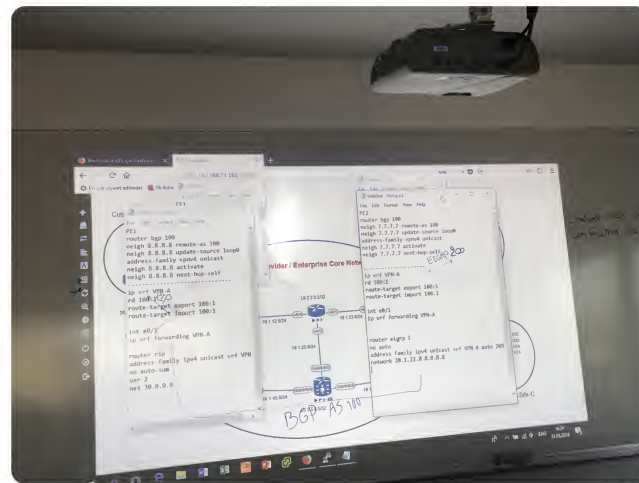




ship router
→ xrf VPN-A

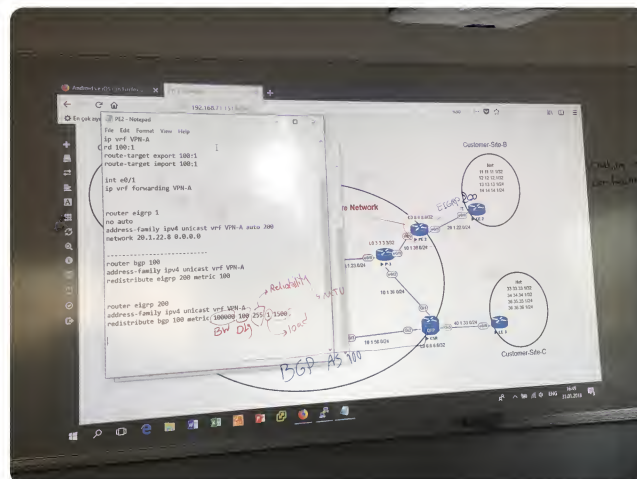
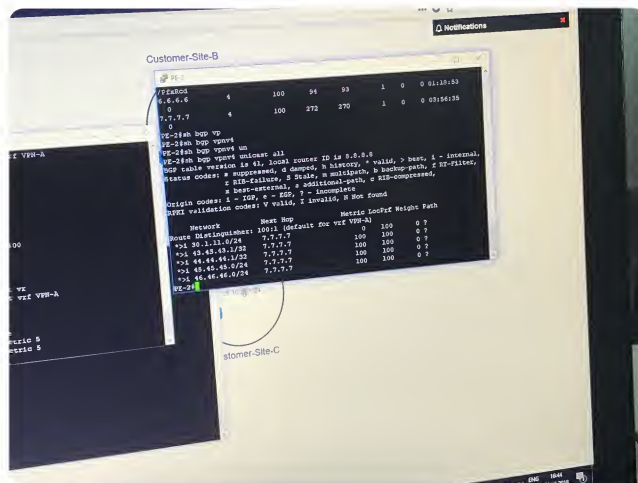
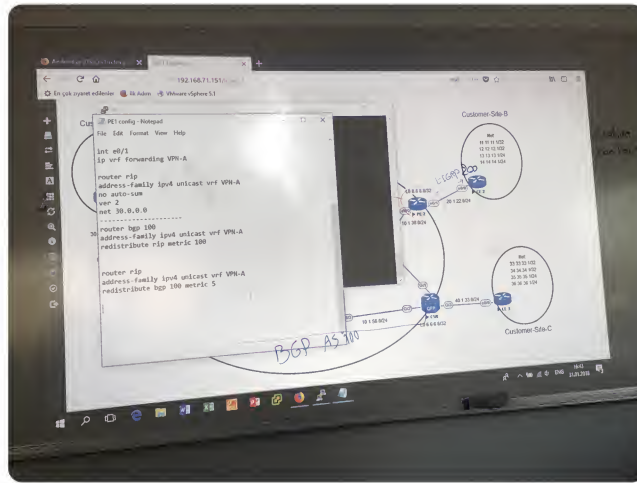
ship route
vrf VPN-A

ping vrf VPN-A 30.1.11.1



sh bgp vpnv4 unicast all

sh ip bgp summary



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1. $\mu \neq 0$

